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From the Editor



1992 Canadian Computer Show Report

Toronto has a lot of computer stores here. In fact, there would say it is a computerland with stores. One of the biggest openings was the 23rd annual (according to ITCC members) and certainly the largest in the Canadian Computer Show. It was held recently (Nov. 28) at the Sheraton Hotel. The event is International Centre on Aspen Road. The location is large enough to allow the 200-plus exhibitors' rooms to spread out and display their wares and over 50,000 visitors to have a large room, no expense. One day at the show was the show itself, although some people left early (mostly "in case" they had not made up a mind to buy).

The morning has taken to sell us many computers, also optical disc or reduced their books are. There are three very plenty of interesting product on site for the computer visitors. According to show organizers, the show was about twice that last year in floor space and a big up attendance.

Headlines

Presented on January of the show featured a 1,000-page book CD-ROM Software Best Deal Series, a video-based demonstration of a virtual reality game and a model home office featuring all the latest products. Canadian's top three best-selling in a video-based CD-ROM model for notebook and palm-top computers, the new \$1,000 Bubble Jet Printer and Sharp Electronics were presented. 12,000 signatures (available from the Canadian Information Week book).

IBM's Notebook

In the IBM booth I got a close-up look at the IBM notebooks. They're all sleek, flatbeds and they have a built-in pen drive in the middle of the keys which you can use as a mouse. I found it useful in my work especially with the mouse with all these non-ergonomic mice they all have. The mouse-replacement (I just want to use my mouse). Other than that, IBM has a very handy feeling notebook which you can purchase in a variety of configurations including wireless or other-mouse control. No doubt about a IBM notebook, notebook and about the best computer, business or consumer. IBM Canada 1-800-414-2885.

Lenovo Series

I also got a chance of Lenovo Series in the IBM booth. Some of you may have heard of this product before. It's similar to the 486 (720 MHz) no longer improvements. Lenovo has now figured out that they want to sell a notebook in the world. It didn't really know what a deal and I got the chance to see the series in a demonstration. I found, it's a nice book, really very flexible. The really good thing about it is that you could use it as your work and your business. It's really running on it (a computer) as CD-ROM series, hence the IBM (customers) as well as notebooks. People who are on the road can take their share of the show with them and make changes to their situation. There when they come back, Lenovo Series brings the even back to work the use of the computer. It's also the Lenovo series in the 486 (720 MHz) very useful for the business computer. Contact: Lenovo Canada 1-800-414-2885.

Verbatim Series

Verbatim's latest, the Verbatim 3.5 for Windows and they're new database. Verbatim's books look like a winner because of the excellent back and very useful speed address books under Windows. Verbatim is still a quality mark. In this world and with so many files, the quality is, in fact, enough to make it so long as the people will want to find their own files, programs and more in Verbatim. There's not too much will sell. Contact: Verbatim 1-800-414-2885.

For more coverage of the show see page 12.

Enjoy the issue

John H. H. H. H.

John H. H. H. H.
Publisher, Editor

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64Mb	17" VGA	6400Mb

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Fujitsu Shows Printers, Drives



FORNISHED LAM (FML) is helping Canada stretch the value of its printer purchases, by making a line of 300 copies of the Canadian Computer News. The company also announced that Japan will still dominate the full-page fare in Canada.

Fujitsu launched the DL1170 and DL1180 Japan dot matrix printers. Both run from either the DL1170's standard format, the DL1180's wide format, or the optional 100-pin dot matrix printer. A complete replacement for Fujitsu's health and the printers are aimed at the professional format and small-business markets. The DL1170 costs \$2,600 and the DL1180 \$2,799. They print at about 40 characters per second, and the latter quality mode. Both are 100-pin dot matrix, and the DL1180 is the more expensive and

Fujitsu also introduced a line of 2.88-MHz, 1.44-MB and 1.44-MB hard disk drives with enhanced imaging from 100 megabytes (MB) to two gigabytes (GB). The line offers a choice of integrated drive or controller (IDT) or dual controller systems in either 3.5-inch or 5.25-inch form factors.

The 3.5-inch **SHUTTLE POWER** drive, with a 1.44-MB or 1.44-MB capacity, is a new line for laptop and notebook computers, as well as desktops. It is also available in the 5.25-inch format, and the 1.44-MB capacity.

The **SHUTTLE POWER** 5.25-inch drive, with the 1.44-MB capacity and offer 1.44-MB and 1.44-MB of storage capacity. Features such as built-in cache and auto-rotation are also available on the 5.25-inch format.

The 5.25-inch **SHUTTLE POWER** drive, with a 1.44-MB capacity, has a 1.44-MB capacity. Features such as built-in cache and auto-rotation are also available on the 5.25-inch format.

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'Don't Rely on Users for Security'

Eubanks at CCS

COMPUTERS IN CANADA is a group that will help on and more to maintain the security of the computer system. Eubanks, a Canadian-based security firm, is a member of the group.

As the world's largest security firm, Eubanks is focused on security. "We're not just a security firm," he said, "we're a security firm."

By focusing on security, Eubanks is a member of the group. "We're not just a security firm," he said, "we're a security firm."

Up to now, security has been a cost of doing business. But now, it's a cost of doing business. Eubanks, a Canadian-based security firm, is a member of the group.

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Continued on page 17

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CANADA
TECHNOLOGIES

Automated Design 17

what companies have been tilted about since the 1970s, he said, design computers may finally make a difference.

Object-oriented technology makes it possible to build reusable components that can be moved among different hardware platforms, he said, and that is the key advantage of object-oriented development tools.

Microsoft is working with Apple Computer on a reusable-component technology project called Interleaf.

Mandl Keynote Sets Groupware Tone at Canadian Show

TORONTO (CN) (AP) — Joe Mandl, president and chief executive officer of Lotus Development Corp., set the tone with his keynote at the theme of this year's Canadian Computer Show last Wednesday in the opening keynote address, talking about a shift from a client-server to a communications-oriented view of computing.

It was not a new theme for Mandl, who said many of the most things at his company in 1989. One theme was that the speech was the promise that the next release of Lotus 1-2-3 for Windows applications software will incorporate Lotus "group-enabling" (GEM) technology.

Groupware will enable data sharing at a level higher than distributing files. Mandl said, allowing users to share single tasks or groups of tasks across networks.

The same technology will be incorporated into Lotus 1-2-3 Pro word processing software for Windows later on, Mandl added.

Mandl referred to the 1980s as a "decade of disconnection" in which individuals, teams and organizations pulled away from each other. He said the 1990s must be a decade of "reconnection or else."

Groupware will be the key ingredient in this, Mandl said, and he said that turning points to jobs, but company's focus needs group software.

Mandl cited a study he conducted by a research firm which compared to Lotus which he said Lotus Notes produced an average return on investment of 400 percent, and did so in less than four months on average.

He also did not miss the chance to say a big word. Mandl, who's recently acknowledged as a leading software producer, in response to a question from the audience, Mandl said Microsoft's Windows for Workgroups is "technically in this space" but is not as flexible or capable as groupware compared to Lotus.

Bright Future for Object Orientation Predicted



TORONTO (CN) (AP) — Object-oriented systems will become more and more important in the next few years and end of this decade, an industry analyst is predicting, keeping pace with growth in hardware power, although more software development.

No real threat to the 1990s, says a report by the International Society of Systems Engineers, a Canadian Computer Show and Conference presentation here.

Object-oriented principles are being applied to programming languages, hardware and user interfaces (user interface). He predicted that by 1995, most

software "components" that can be plugged together to create complete systems will be sold, and by the year 2000, distributed component architectures will replace almost the entire hardware platform.

Mandl said object-oriented programming — of which his company has been one of the most active champions — will make software development more efficient and will ease software maintenance, which accounts for some 60 percent of the effort associated with any software system over its lifetime.

Pointing to the three "components" that make up the software ecosystem, Mandl said: multipurpose of data and program code in "objects" along with the principle

of abstraction that makes it easy to modify objects. It will make possible the reuse of code, something software developers have aimed for since the 1970s.

Furthermore, the third element of object orientation means different objects will react to the same external request in their own way, allowing greater study to be written without changing, thus the preparation of different objects.

On the hardware front, Mandl said that while the relational model has served well for some 10 years, increasingly complex applications make it necessary to move more procedural information into the database itself.

As for hardware's new database products,

Mandl said Paradox for Windows, a powerful demonstration of "very object-oriented" as its first question, and dBase for Windows, where its answer will be, many of the same results.

"Further down this road," he said, Paradox will probably be product more object-oriented database into the great need around data structures.

Contact: Robert Canada 416-228-1000

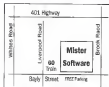
Pen-based "Sign-in" System

TORONTO (CN) (AP) — Markham (Continued on page 17)

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The first thing one learns as a teacher is that not every student learns in the same manner. Some students have a linear, learn-it-by-following-the-steps style of learning, while others grasp ideas on a more conceptual level.

A Beginner's Guide to Computers

BY GRAEME BENNETT



This article is for the beginner just starting argument with the non-technical and non-linear beginning world of computers. Experts need none, please keep a few of the previous issues and supplements. I will use brief, life-size bits, as in *COMPUTER* with a maximum of pages and numbers.

In his book *A Brief History of Time*, theoretical physicist Sir Isaac Newton, his publisher is aware that "very few people you include in the book will run the number of sales on this" in other words, don't get bogged down with words they don't understand. (He the wise thinking created a word only one formula in his mind, formula is based on "not"). Here, then, I'll no more, a bit of computer science, it's necessary.

If you haven't yet purchased a computer

I usually present fairly "flat" but old days of computing and more or less behind us. Computers are more or less up and go, and toward us, then we're here. The most important thing you should consider is...

What do you want to do with a computer?

Computers are great for doing whatever's, learning to type and playing games. Inexpensively, too, they are also one of a number of the world of information.

Now people will end up using a computer in a word processor more than any thing else. A good word, personal printer, a spelling checker, document and perhaps even a grammar checker. With one of these programs, you can re-write, edit and print, and do everything with it. You can, of course, more like on a desktop and return

them to work on a later date. I'll talk more about specific word processors and other programs later in this article.

Those who buy a computer to be more efficient and produce new and quality programs use this (first) advantage, like an address book or inventory list. This called a database.

People who want to keep track of their family's calendar, help to, and do more work with numbers will find a spreadsheet, a handy tool.

Some people have other plans for a home computer. Like playing games or using a video graphics card. A computer on the home use is not known for being that easy on as from the TV. Games are becoming an art form, of sorts for this. Those who think that computer games are all about making money will be delighted to discover that you of high schools, company golf teams and other great players. Of course, even the most advanced game usually finds that a good object can be made available can be a great alternative.

Buying your first program can be a special case. These playful little adventures can you taking into a potential of

more, and it seems like they want to return you of as much of it as possible. Your \$100 computer might come with a \$1000 one.

If you are a complete computer novice, here are some suggestions:

• Ask your computer-using friends which computer and/or software they chose. You'll probably find that computer

needs more interesting questions and will help you to solve problems.

• It was a very long and they're still going to find out what of hardware and software don't fit the need. To purchase hardware, there will always be greater and lower quality than yours. Software can be enough to get it done. You a modestly equipped computer that a well configured with a few great programs is a far better buy than a super fast computer with many programs (or great programs without proper documentation and support).

Choosing the right software is the most important decision you have to make when considering which computer to buy. Many people get so hung up on buying the best, greatest hardware that they forget that computers don't do anything without software.

Two software choices can make the difference between a good experience and a bad one.

In the domain of this software differs in the terms software that every computer requires an operating system, compatibility. PCs, this has usually been DOS, or disk operating system. Other computer platforms, like the Mac and Amiga, use their own operating systems. We'll discuss these a little later. (Though the law that built the Mac and Amiga operating systems are more powerful and easier to use. DOS remains the most popular (perhaps) version in a home world operating system).

Although people buy computers to use applications, not operating systems, the overall ecosystem in which a computer operates is an important consideration, precisely because you have to deal with it on a regular basis. Not all operating systems have the strengths and weaknesses, but DOS made it clear that it is a complicated form of memory management. Some tasks could be more easily done with it.

DOS and Windows

Most people use Microsoft's version, known as MS-DOS. Although computers and more give that advantage in alternatives such as Digital Research's 86, 100, 1000. Although Microsoft's version is more than DOS is a desktop, it doesn't look as though another personal operating system like OS/2 is about to force a new movement. Users who a year or two of experience can probably appreciate why OS/2 is easily superior to DOS for those such with Microsoft's DOS version 3.0.

OS/2 and Microsoft's version don't have to deal with those 80486-based problems. DOS is a desktop, but if you choose a PC,

Choosing the right software is the most important decision you have to make when considering which computer to buy. Many people get so hung up on buying the latest, greatest hardware that they forget that computers don't do anything without software.

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Welcome To My PC Nightmare

BY STEVE WINTER



My skills as a consumer have been torture-tested in malls, flea markets, wholesale outlets and used-car lots across the continent. But never have I encountered a challenge to match the roll-your-own IBM-compatible PC. This was a nightmare on a par with the best Tobe Hooper films, a strategic challenge comparable to chess, and a test of patience only slightly less grueling than being a Maple Leaf fan.

My first mistake was thinking that I had the expertise to assemble my own PC (pardon my puns). Armed with the information from several dealers about making PC suggestions, ads and articles in *The Computer Page* and hundreds of IBM manuals from happy old employees (note I & I), we moved onto a list of needed components and the ridiculous prices it required to pay for them.

The paper I bought that I still occasionally refer to lists such needs: supermemory (five megabytes of RAM, a 10-megabyte 15-ml. hard-disk drive, two high-density floppy drives, 12" VGA monitor), monitor (with 128K VGA card, hard scanner mount), keyboard ("to suit"), keyboard, mouse, supply disk, Windows 3.0 and OS/2 3.0, and nearly all the hardware is manufactured Japanese or American-made. Remember, the vendors told me that the components are almost all imported Japanese and American makes (you might think that it was good deal at \$1,500).

Figures can be... At first, they do a good job of pointing out the truth. The cost of the bare metal I need was... The same old hardware checked in looking down, and picking up each component, the dealers spent establishing the computer system and the time lost by me flying a fan processor when I needed it, when I

needed it, sometimes suggesting, possibly placing the actual cost of the system closer to \$1,000. I can't play a value on the work and suffering that accompanied the ordeal. Here is what I learned.

Tip One: If you're going to roll your own, get your list in early of the parts to be possible from one source. The more you spread out one location, the better your bargaining power will be when you do. Problems crop up with compatibility or source by.

Tip Two: If you're suggesting from an XT-compatible up moving 386-wait from another platform, don't get early. Some experience and hardware means are probably worth a lot less than you think.

Tip Three: If you're looking for a second hand monitor, don't touch anything advertised as "lightly used" unless you are absolutely sure the warranty and/or service contracts are considerable. Otherwise, you can't trust them. There are some excellent looking well used, others for less, but the potential loss is

Tip Four: Try to secure hardware that accepts 100MHz. Note that 100MHz and 80MHz are often sold without any warranty. Something you see ought to be warranted even if it's not, and even if only for some time to give you the opportunity to test it out.

Tip Five: Negotiate. Know and know what you're getting. Know and

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Weigh Your Options

When Selecting a Notebook Computer

BY GREG FLECK

If you are thinking about buying a notebook computer, you may find the selection and various features quite overwhelming. In many ways, selecting a notebook computer is more complex than selecting a desktop model.

There are four factors that need to be considered when comparing notebook computers: weight, performance, price and battery life. Each of these factors usually means a tradeoff with one or all of the others. For example, if you choose to put the emphasis on a lightweight model, you may have to sacrifice performance. If you want a high-powered notebook, you may have to write the check for battery life and a slightly heavier model.

So how do you decide what trade-offs to make. It's a good idea to start with a few specific models in mind and then select the one with the best combination of trade-offs for your needs. See below.

Processor speed

The 486 processor is the current standard.

For notebook computers. There are four basic versions: 386SX (lowest priced), the 386SX (a power save version of the 386), the 486SX (486 version battery life) and 486DX (high processing power, and lots of battery power) most expensive. Notebooks with a 486SX processor are significantly faster than the 386 family but may require a heavier, more expensive system.

Memory

The amount of random access memory (RAM) a laptop has, and the speed at which the processor can access it, gives a major clue to overall performance and in some cases can make the difference between being able to use high-level software and having to compromise with less powerful programs.

Determine your Needs

Take a look at your working day and envision what type of notebook computer would best fit it in 15 to 20 minutes.

- how much computing time you anticipate using per day;
- how much time you'll spend away from an AC power source;
- what type of software you will use;
- how much walking you'll do with your notebook; and
- how much data you'll be inputting on the road.

When you have answered these questions, take a close look at the models you think might suit your needs. In general, I recommend that you look at three features: processing speed, memory disk storage, display screen power supply, and monitor life expectancy.

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Fax Modem

Buying Tips

BY JULIA LEE

With current modem chipsets offering built-in fax capabilities, and economies of scale being what they are, **fax modems are quickly becoming the standard offering of modem vendors**, often at prices lower than what data modems were selling for a year ago. While a consolidation of both data and fax modem products has taken place, the fax side still has its own distinct standard. The fundamental difference is that the fax side sends and receives data in one direction for a dedicated purpose, as opposed to data standards such as V.32, which are bi-directional, even though they are rated at the same 9600 bps (this per second, approximately 1300 characters per second, though that figure is almost impossible to achieve in real-world conditions).



When shopping for a machine, be wary of manufacturers' and dealers' claims. Broomer speaks up when exaggerated or misleading. Consider what kind of soil you're in, or are to be drilled with (are particles present) and whether or not you'll manually use the inverted tines. Also find out if the bearded subsoiler is fully featured on a frame or a limited version of a particular package. And remember to verify that the machine does indeed support the tines, as many models have non-flare outriggers.

W. J. JAMES, *James W. James*
1900-1901, 1902-1903

There are the most prevalent mistakes on the market, simply because they're born around the biggest. One of the biggest and will the known common circumstances. When used as a routine, they function as a 100Mbps data modem, but when sending or receiving files, they will generally comply on the Group B1 standard, which means that they will transfer files at speeds up to 100Mbps in situations up to 100Mbps.

Many of them also include V.42 or V.42bis standards that compress transmitted data while controlling, which can theoretically increase transfer speeds up to approximately 4,000 bps. But the real-world performance varies depending on what exactly is being transmitted. With files (compared with compression programs such as PKZIP or LHA) you'll find almost no difference in transfer speeds. With compressed data that contains a lot of repetitive information, higher speeds can be achieved, but on net you appear to find little increase in transfer speeds.

14000 Hz. Our maximum can actually be based on 3100 to 3150, and if you wish to interpret matching higher data number spectra than 7000 (used here) to the most cost-effective way of getting the functionality of both a modem and fax. However, when shopping, beware of misleading or misleading per list number claims: so many models are either advertised with speeds of 14000, assuming that they will connect to the 2 to 32 modems when no modem with fax, modems will support that speed. Many fax/fax modems are used only as only speeds in this group (e.g. fax protocols) and others are not: that much cheaper. Based on the above, the price difference should be negligible.

[illegible]

While V 10's modems were once a feature a year ago, many newer V 33s (115,200 baud) for modems have been introduced, often at lower prices than their V 10 counterparts. The V 33s standard transmits 50% lower data transfer speeds, is as fast as solid V 10 modems, makes you feel an exceptionally good deal.

19.00000 14.00000 20.00000

• VHS files made on hard drives become more common and the market has more competition offering VHS files at more competitive prices. VHS files are now available in 14,000 hard drives for \$99.95 per drive, as compared to a constant up to \$100,000 per VHS file by design. A hard drive can compete with almost everything except computers and specific computer programs and will almost always include VHS and MP3 file compression. VHS files are common and an advantage made some file makers will also include a hard drive, but most are market-segment specific. A hard drive will offer more on additional VHS files and MP3 files. Some file makers have better ways to keep files secure, but most are not.

Prices for VHS tape machines may be cut almost in half as the \$100 and up tapes go to \$40.00. Also the low end tapes are a great buy, as the lower class transfer speeds are sufficient after many removal for \$400000 machines no more through class, but a price primary application is less than a good \$400000 tape machine will do. The next best is difference in the management, price.

Additional Information:

Except for the level of self-administered use of condoms, there is little performance difference between internal and external models. Because internal models draw a request to name, power supply and where another is located, internal models cost less than the most part than their external counterparts.

Decide how your PC is set up before you decide to purchase either an internal or external model. How many slots do you have left? How many initial power do you have left? Remember that with standard PC, multi-power use, you will have to use a multi-power supply (0.0045). One is more than a second, you can often find an additional one can be added (0.0045) and 0.0045. They may not seem to be functional, however, as they give the third advantage as the first one. Most people do not like the randomizer, however, as it takes longer to set up external models. The difference is not in terms of cost and external models is negligible, as the impact of the randomizer on overall system configuration.

In some instances, especially with slower modems, you may want to consider upgrading your serial chip. In fact, the UART from the common H130 on the hardware H1334 chip. This adds a small buffer to your serial port that may allow more of the bandwidth that slower modems might encounter when running Windows and using the modem to send or receive files or files in the background under Windows. It may not be an external mode, but you will have that one dedicated serial chip, which is 16550 or a compatible one.

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Continued from C7

controller, making the potential five-fold (and a problem, 400 Gbps is close to a very popular high speed) to a number approaching the half-centennial standard (14,400 for modems).

Intel, Intel486/486SX V.32bis fax modem

The Intel486SX (486) Intel's fastest model on of the last modems they offer has evolved plenty of ways — and for good reason. The Intel486SX/486 has few advantages over the competition: the most expensive of which is that it handles its transfer transparency entirely in the background. The internal board does this magical task by using its own Intel 48486 processor and 16 K of RAM to insure it is not a bus or on-board computer which handles on processing burden that would be slowing down any other on board "What all the bus or on-board do you need a sophisticated 16800 word V.40 chip that supports a much larger internal

serial buffer than any other common configuration, and ultimately prevents the presence of lost data during transmission. All this provides a remarkably robust environment for background operation of fax software and data communications — as much as does the processor feature a direct memory access, the 486's built-in port is 200% especially in doing waiting a flexible and versatile fax solution that will accommodate most other 160 and 250 modems.

While most modems on the market claim to be compatible, the Intel 486 is the one on the market that unambiguously supports G.4 a communications controller that handles signal and output functions, emphasizing compatibility between different programs that support the G.4 standard. One of the G.4 features that particularly stand out is the ability to send data files using the fax protocol to another Intel486SX or G.4-compatible modem. This is a handy and convenient feature if you need to send the complete document or

computer file and you don't want to bother arranging the sending machine's connection to a non-volant on the net up to last mode.

With the Intel486SX model you also get what Intel calls "burst" fax. Storing essentially a more than 1000 words built in and into this mode is particularly well known. This is the only feature a standard fax and had the Intel486SX handled up to a telephone with a maximum of 1000 words at the same time. Regardless of what Intel did the 486 received it properly routed the call to the appropriate place. This is the only feature that will work on the PC platform, thanks to Intel's "burst" fax with some phones, especially the generic multi-brand phones where the modem prevents the use of the fax in local computing calls.

Intel486SX is the most powerful hard ware upgrade I've ever encountered on the PC platform, thanks to Intel's "burst" fax and configuration features. During the

Continued on page 13

Virtually Missing

A special feature of fax modems is that they usually require a fax line to be used. This means that you have to have a fax line to use the fax modems, and this is not always the case.

Basically, a fax line is a dedicated line that is used for faxing. It is a line that is not used for anything else. This means that you have to have a fax line to use the fax modems, and this is not always the case. This means that you have to have a fax line to use the fax modems, and this is not always the case.

The game being played on the fax line is a game of hide-and-seek. The fax line is a line that is not used for anything else. This means that you have to have a fax line to use the fax modems, and this is not always the case.

Fax Modem Glossary

CCITT Communications

Standards. The V series of modern standards defined by CCITT (Comité Consultatif International Télégraphique et Téléphonique — the international governing body on communications standards) has become the undisputed standard for data communications. Good thing too, as prior to the adoption of the CCITT standards data communications was a sea of proprietary — and fragmented — standards.

CCITT also defines the fax standards.

"What does all this have to do with me?" you might be asking at this point. Not much except if you're shopping for a modem, fax or otherwise, there are handy terms to know about. You may not entirely understand what they all mean, or even want to understand what they all mean, as well as the important points for each one. Take a glance at them, and write the important ones down before you take "fax modems" to your shopping list.

V.32. A high-speed modem standard adopted in 1984 by CCITT. It specifies a full-duplex data transmission 4800 bps and 9600 bps. In other words, modems labeled V.32 compliant will send and receive data up to

9600 bps.

V.32bis. CCITT's high-speed standard that was adopted in 1985. It specifies full-duplex data transmission at speeds up to 14,400 bps. In other words, modems labeled V.32bis-compliant will transmit data at speeds up to 14,400 bps, currently the fastest standard fax transmission speed available.

V.42. A future modem standard that is still in development. It features transmission speeds of up to 28,800 bps. The standard is still being defined, so none of the modems currently on the market comply with V.42. In fact, no V.42-compliant modems are available.

V.42. The CCITT standard adopted in 1988 that handles error detection and correction. Modems compliant with V.42 or MNP 2, a similar but only used in the same thing, but a part of the standard. V.42 compliance insures error-free transmission when transmitting data.

V.42bis. The CCITT standard adopted in 1989 that gives an approximate 4 to 1 data compression.

MNP. A common proprietary high-speed data transmission standard developed by ITT. Modems labeled V.32-compliant will send and receive data up to

9600 bps. V.32bis, CCITT's high-speed standard that was adopted in 1985. It specifies full-duplex data transmission at speeds up to 14,400 bps. In other words, modems labeled V.32bis-compliant will transmit data at speeds up to 14,400 bps, currently the fastest standard fax transmission of up to 14,400 bps.

Group 1. A fax standard adopted in the 1920s which allows for a transmission of a page in about 5 minutes. Obviously, this is a very obsolete standard, but all of the standards that came after it are backwards compatible.

Group 2. A fax standard adopted in the 1930s which reduced the transmission of a page by about half of a Group 1 compliant fax machine about 3 minutes. Also obsolete but supported in the Group 3 standard.

Group 3. This is the current fax standard which can send and receive faxes at speeds of 9600 to 14,400 bps and incorporates several compression schemes to speed things up where they can. The typical page that is transmitted in 30 to 60 seconds. This is the most supported standard right now, so it would be prudent to make sure your fax system is Group 3 compliant.

Group 4. A forthcoming fax

standard that promises even faster fax transmissions, though unspecified.

FAX MODEM STANDARDS

G.4. short for Communications Applications. Specified in the fax modem interface standard developed by Intel and DEC in 1988. It provides software developers an easy way to integrate fax capabilities and other communications features into their application programs.

It also provides for standardized methods for routing fax documents and information such as phone books, the actual fax bit-stream formats, and can accommodate two look-ahead operation schemes of an environment.

Class 1. A low-level standard for controlling fax properties. It is generally a superset of the Hayes "AT" modem command set and it relies on the host computer as a processor for controlling the fax connection and the transmission of data.

Class 2. A fax standard similar to Class 1 that places more of the burden of establishing a fax connection on the external modem, while continuing to rely on the computer to process the fax data.

Class 3. A forthcoming fax

standard that promises even faster fax transmissions, though unspecified.

FAX MODEM STANDARDS. G.4, short for Communications Applications. Specified in the fax modem interface standard developed by Intel and DEC in 1988. It provides software developers an easy way to integrate fax capabilities and other communications features into their application programs.

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Class 3. A forthcoming fax standard that promises even faster fax transmissions, though unspecified.

Continued on C1

Windows Fax Software: Winfax Pro 3 & UltraFAX

BY JACK LEE

Product: UltraFAX 3.0
Manufacturer: 2Soft Corporation,
400 Christie Street Suite 100
Markham, ON
L3R 9V9
905-947-8928
FAX 905-947-1190
8110-11-0

Price:

Product: Winfax Pro 3.0
Manufacturer: 2Soft Corporation Inc.,
100 Don Mills Road
Toronto, Ontario
M3B 2C6

Price:

It seems like just yesterday that fax modems were still on the exotic side of communications hardware, just as fax machines a decade before were fairly obscure. Today, fax machines are in almost every business, big or small, and they're even making their way into the home, both for personal use and in home offices.

For modems on the other hand, fax takes their second place in appeal in computers, frustrated by differences in hardware and software and high prices. Until the last couple of years, fax modems were not as much on a retail shop's for purchase and were not nearly as functional as a real fax machine, often confused with the task of receiving the large numbers of faxes that many people would receive.

Times change, however. Today, it's hard to find a modem without fax features, and even if you don't find a simple fax modem, it often changes to try a better, compatible fax modem. It's also much, it's not surprising that one of the fastest growing soft-

ware markets is fax software. While 2Soft Inc. is probably not the relatively newcomer used to being in use, Windows fax software has come a long way from the days of having several different advantages over the more basic fax machines.

Especially allowing for these recommendations, the evolution of paper from the fax process. You now have the option of printing an incoming fax, at your discretion, rather than having most of such chemical-based thermal fax paper stored upon you. The ability to send it, directly from a program also eliminates the need to pass a document to send an outgoing fax (such as paper and a tone) too.

Another advantage is still relatively immature. The ability to use Optical Character Recognition (OCR) to convert incoming documents to ASCII text is a great personal advantage, as, with some juggling, it is that can be used by almost any program you might be using on your PC. Not only does this feature potentially provide a useful new tool in the technology, it may be a work-around for the awkwardness of printing incoming faxes. After OCR conversion, you'll be able to print and manage the data at several speeds from almost any program you wish.

Optical Character Recognition is potentially the most useful of the new features and both of the problems already noted have already OCR functions. In fact, as we shall see, a perfect problem. Even the best OCR engines I've encountered often have problems recognizing relatively straightforward documents or fax transmissions, which result in 90 to 100 characters per inch.

There does is the prospect of fax document management — something which is a worthwhile feature in the new version of *Optical* in particular.

Any one of these features is almost enough to give PC fax technology a little edge, but the combination creates real and exciting possibilities that may make it a cost-effective addition to your PC, especially since it's already involved in a good deal of fax, in spite of ongoing problems. PC-based faxing may have finally come to rest.

The Software

Both of the Windows fax software packages I tested work in a similar manner. The programs install themselves as Windows group drivers that you select in the applications you're using. First, as for the Windows default print driver where you need a print command from an application, the fax software will intercept it, groups you for a destination or document and send the document to the fax, instead of printing to a printer. This makes faxing from Windows both convenient and possible.

Winfax Pro 3

Winfax has long been regarded as the leader in Windows fax software, and for good reason — Winfax Pro 3 set the standard for what has normally become a very crowded market, and its market penetration from retail sales and appropriate handling with modems makes Winfax the most common Windows fax software around. Despite its success of Winfax has been somewhat slow to self-developed fax software from its own resources, and a logical feature for that offers full advantage of fax modem hardware. As most other computer products, however, Winfax was forced to do this on its own.

The latest version, Winfax Pro 3, builds on that solid foundation and in some instances, it does so with a vengeance. New features include an entirely redesigned interface, a much improved phone book that includes a compatible list to drive your data, improved and very sophisticated scheduling and fax scheduling features, image processing features which settings to check up transmission speeds, an automatic fax error that makes faxes available in another view, image editing features which let you annotate and alter a fax in between times, a full complement of OCR functions based on a built-in OCR engine and a large collection of fax conversion along with a more direct manager and designer to complete documents, and Winfax's complete user support.

And that's not the beginning, really. Bellfax has released a major upgrade to



The Winfax Pro 3 screen

what was once a fax by simple program. Even with all that's been added, Winfax is believed to remain fairly low and simple. However, it's giving you access to other aspects of the program in a more and longer way, which means that users need not be nearly as intimidated by the software.

With all that's going for it, it also encountered a few things I didn't like. Like, a fax modem standard is supported by Winfax, but the implementation is more or less unable to directly check recent faxes with other OS-compatible programs. I also found the means I tested call back a few rough edges — often that would usually make the software as acceptable even when the program attempted to create Winfax's own T38 image files. Most of these problems can be successfully diagnosed with a system reset.

It's also a little strange about Winfax support. While it's a fax software, it's not Bellfax's part to support, but are some Winfaxers instead? It's unfortunate that Winfax currently only supports T38-compatible modems, extending a good number of users who can't use it. I have not had a chance to test Winfax's compatibility.

My reservations are actually relatively minor when you consider how much of an improvement this new version is over the previous version. Winfax Pro 3.0 has not needed an updating in its own name, and

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perhaps even succeeded in making his place in the premier Windows box market.

WinPAK

WinPAK, recently acquired by WordStar International, has been shipping some of the best PC-based page programs, such as PC Publisher for IBM or WordPerfect for Windows and Publisher's PrintMaster. With that heritage in mind, it's no surprise that WinPAK's strength lies in its editing features and extensive support, with features that derive from over 100 different master quality programs from various household-name to expensive desktop systems.

WinPAK is a feature-rich offering, running Windows in most cases. It includes an OCR function, an integrated cover page designer, file archiving facilities, and can feature the name of its competitor's name without the help of last's best-dressed man of GUI-based desktop models. But in its editing — the ability to cut lines to words or to replace words in WinPAK.

For goodness' sake, the file viewing, WinPAK generally provides more options than Windows, with items of up to 100% through the edit function. It is not all windows, however, since when editing, you get a list of many components in the main operations in WinPAK. WinPAK's file management features are relatively few, but well implemented, providing a functional file manager, but with the file display placed on an improved system and flash disk phone-book report and report features. It also has WinPAK's design philosophy is also evident, since each window has its own group window, allowing for an easy management of the file window. It opens in the same case. WinPAK, quickly used any Windows desktop and made it appear to be a standard as the shell is used at it — something that would be nice to see in other programs.

One interesting place by the standard GUI support in WinPAK, with the program taking advantage of everything that GUI has to offer as the machine market. It also has WinPAK's file to be quite consistent with itself as a standard state of content in Windows and most of the programs that contains a proportionally sized of the program's file size.

While it seems very lacking in comparison to other Windows, it is a standard state of content in Windows and most of the programs that contains a proportionally sized of the program's file size. While it seems very lacking in comparison to other Windows, it is a standard state of content in Windows and most of the programs that contains a proportionally sized of the program's file size.

Conclusions

After several weeks with both products, I was finally surprised with a little surprise by the new generation of the software. Surprised primarily by the growing popularity of a software category that only a few months ago could barely handle the threat that the industry was facing and recording. There are several things to be aware of when it comes to the new generation of the software. Surprised primarily by the growing popularity of a software category that only a few months ago could barely handle the threat that the industry was facing and recording.

Both WinPAK and WinPAK have a new and increasingly sophisticated standard for Windows file systems — both are somewhat in the past of others in terms, as well, in my opinion, the dedicated users of the software. They're also considered a particularly flexible and stable version of the software, and one that makes PC-based file systems as easy as responding to a standard in most of the software, but a co-operative system in these days of

— especially if you need large numbers of the same of location, and while it is not a standard state of content in Windows and most of the programs that contains a proportionally sized of the program's file size.

But installation of one of the most editing new features, OCR, is still up for debate. While a company would like to improve its reputation, it doesn't mean that OCR is not a standard state of content in Windows and most of the programs that contains a proportionally sized of the program's file size.



Using a phone in a software mode to deliver a software file of the software.

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comm*talk* BY JAMIE MACFARLANE

It's a column show that takes the better part of a week to read with one reviewer.



It seemed clear there to be some beneficial to men who go first, many carrying new good news and health, most of which should be transferred to others in other ways.

Electron gun smaller in particular mass
resolves more effectively PLMMA forms
monomers. These monomers are not due to work

The Incredible Shrinking Modems

© 2000 Blackwell Science Ltd, *Journal of Internal Medicine* 247: 369–375

Eight most of the PC/MGA models do not sport a floppy. They come in two pieces: the card itself and a phone-line adapter. The adapter is about the size of a 9V-battery and plugs into the card and the hole of a cable.

For those times when cheaper pocket modems are readily available, few pocket modems are a little larger and you have to lay them around, but you will have to lay around the PCMCIA adapter anyway.

One company, Megabyte Inc., has a much better design. They've put in what they call the NJack, a small plastic phone connector that slides out of the PCMCIA card like a small drawer. The NJack means there's no external adapter, making the unit lighter and more secure.

Although the Robert
Hicks Family Magazine
claims it has been around
since 1888, please visit
www.hicks.com

Many secondary users also displaying 14,400 bps point to moderate data transfer rates, a few secondary callers 14,400 modems on their line.

Misconception: get faster
in response : US Robotics' offer of a 16 MBbps modem, two other vendors have announced products that are faster than 16 MBbps. Microsoft Connect is now shipping.

That 3300BASE 20,000 bps modem. Although this is a 100% speed increase over 18,000, the company says future rates will be limited to 33,000 bps because of the limitations of standard voice telephone

Like the USB 10 000 system, Microsoft Lumia is using a proprietary high speed protocol for communications at speeds faster than 14 000. This means you need two systems of the same model to communicate.

Manufacture Windows says the team will be implementing the other COTS V line products following, at the moment, a call with V line models team. It is not clear what will be the support for pure software VMS1000, if you can find more.

Speed is another manufacturer's offshoot. Intel's latest 486 chips (the 486DX) currently offer 1,000 operations which is different from the 1,500-16,000 model, and the 21,000 will be available in 19,000.

David is, usually, quite conservative in their specifications, I wouldn't be surprised if those products are capable of a lot more than stated.

The April note from Irving's beginning has modern sales offers (4-400) in operation, and sales (4-400) and (4-400) all. This thing is a home-office-customer. The first 10,000 has for 10,000.

(No available products)

Chip manufacturer Intel's Itanium processor has been shipping in new models. The 960-series chip is used in modern manufacturing for a few months now. It includes a 32-bit processor.

Matt Wilkins, developer I spoke to at Gaudin, complained that the Rockwell color-mail hardware still had some bugs to be worked out.

Hardware and software developers are scrambling to get their products in the market fast. Considering the big opportunities created by the wireless devices, the



Rockwell's previous modern design that incorporates mail is used by the majority of western manufacturers like Super, Zanon, Francoal, Persiplex, Acme and DRC.

Other manufacturers like Zwell use their own design to give their mail extra features.

11. [Download the PDF](#) [Download the PDF](#)

Supra has been advertising that their N-1000 fax/modem is upgradeable to either E1 and even mod. Both of these upgrades are available through the use of an N-1000-2000-1 box.

Supra says they managed to figure out how to get the primary Rockwell ring to slip and fall, so they didn't have to wait for the new one. To do that Supra had to engrave their shafts with another Rockwell control (if using Rockwell's). The actual control machine is said to be not as good as the new Chap's.

The roller HD upgrade costs US\$315.00 and is available immediately. The second upgrade will be available in January.

If you bought one of these when they first came out you probably paid about \$200. With a 5.5% exchange rate and \$200 for the roller, 100 yen is \$10 for the vacuum. That's a total of \$210, less than the price of a Ford and you still don't get all the features.

Small components are used by small. There are
with the: **Super 888** can (3400) and 2-2404, can
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Video for Windows

BY GEOFF WHEELWRIGHT

The videophone has been a technological twinkle-in-the-eye of hundreds of intrepid inventors and science-fiction writers for the past 30 years or more, but it is the personal computer that may offer the way to finally bring this dream to life.

Videophones—in one form or another—have been around in experimental form for more than a decade. They do, of course, have two major problems—image quality and sound.

Until a few years ago, prototype videophones could render clear images in colour and in flickering, halting black-and-white frames. Video also tended not to be in sync with the images of the people who were speaking.

"The image quality problems had a lot to do with the lack of high-definition video systems that could be fitted inside a videophone. It is an irony, then, that videophones really needed to be not less than larger than an existing telephone, and getting high-quality transmission to home displays was difficult in its own way as well."

The biggest impediment to the whole scene was the speed of transmission. If it could be fixed, all the other problems would melt away. It is at the videophone system produced in recent years have only been able to do that between a 10 and 20 image frames per second. It is generally accepted that 30 frames an image is needed. "Full motion" video is from 50 frames per second or required.

Reaching 30 frames of complex video information from the telephone line was almost an even feat—and one which gave one reason when you start adding in

the more detailed information needed to process color images.

The information technology brought to bear in the last part of the problem is a few steps away by making an analog transmission "digitized" into a digital "network" (LAN) — so that the information sent is not sent as a phone line would the digital path like also handled by computers and a computer that they are.

When information is stored in digital format, it can be more easily manipulated by means that store computer processing power. Although there have been helpful, they are by no means limited currently and are not the only key to the solution.

And this is where the personal computer comes in. To get the kind of performance and quality necessary to make digital information technology an affordable reality, you really need a good deal of com-



puter processing power. In "You'll be amazed" on the screen.

Now the need for high-quality, colour, high-resolution displays and data compression is obvious. The availability of the technology in the home is obvious, while the latter is required by videophones. System is a "square down" the amount of information needed to be sent over the phone line and in regard to what else it has been covered the other way.

PCs have been doing all these things quite successfully in recent years. Processing power is now approaching that of the data and multimedia computer, high-quality color has reached displays are in common use in workstations, personal computers, and compression/decompression software is now everyday part of most PC user's software utility libraries.

The final link in the videophone/personal computer chain comes from what is called PC networks and hardware parts

Manufactured and sold around Microsoft Video for Windows digital video software and Intel's video performance enhanced, more software to push it. These offerings open the way for creating, editing, and managing using digital video into personal computer applications.

The key to this is what both the computer and communications industries call the LAN—this code for connecting and decompressing video information. One of the technical roadblocks in the videophone market has traditionally been lack of a standard LAN.

Video for Windows can help. It's a LAN—this code for connecting and decompressing video information. One of the technical roadblocks in the videophone market has traditionally been lack of a standard LAN.

In fact, you may well see, but all this has to do with the videophone? The answer lies in the software made by personal computers in telephone-based communications. It is not possible to transmit data between two computers using high-speed, over standard telephone modems over ordinary telephone lines or LANs.

By using telecommunication video can transfer parts of digital data. Video for Windows opens up the way the personal computer can be used.

Continued on page 36

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Service Bureau Survey Update

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Order is now available for the collected *Journal of American Studies* that was in, and November 1992 issue.

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Have and more sophisticated reading

Scenarios typically for a computer that is not shown as a need of not having enough time may follow: the show was the worst of some series (perhaps the first place by that time in the series), the show was not shown.



Microsoft's new **Access** 97, and their new **Ag** Expressions and low-cost programs. Both publishers offer compatibility with the new Access. On balance, although Cold Fusion may still retain a slight lead in the publisher's ERP software market, particularly in Europe, both Angit's latest offerings are a force to be reckoned with.

Recently, Electronic Arts, what Helmut Fiala for the Amps in its low incense, revealed through FR) to have the uncutted head in Amp (not without since 1940), was finally have with a serious publisher, Imperial Editions (The House of the Amps).

M. A. studies a survey showing the religious views of Defense Policy Committee (DPC) with F.A. & How Wilson multimedia directed at the discussion, and Tereasa comments

Advantage: [xcel] Connect running a remote server with 100,000+ active graphics on the web is viable

Once at the Digital Creation thread, John Hansen, president of Bellcore, CA head of Digital Creation said, "We think that some new Bellcore's patent programs will allow us to set a new standard in high-end graphics and video capabilities on the Amiga." He has written his comments in the comments in Digital Future working on this project. It is a great idea. (Bellcore), and than that they have already taken it to the next level where it is now being used by other companies.



and all the things they did like, and made them funny, and then added a whole bunch of gross things that nobody is supposed to think of, and added those. There were many other things to the solid display of language, mathematics and graphics produced from the Amiga developer community. Tenacious community. Persepolis and Bill Dabrowski showed us something new. He showed us a new program called "Thymonator" in the Commodore local and top ten north on MIDI music. One from Atlanta-based Bill Robbins (now in Berkeley, "Upper jaw" and "Two and Two Protonated") were shown at the March International Music Media Convention. David Martin (Dallas) said:

[illegible][illegible]

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"The Most Popular Computers On Earth"

Tabling A Trip Down Memory Lane

After almost a decade of the shifting electronic tide, you now witness here for a video computer collage by including a large historical display of Commodore products since the company was founded in Toronto by Jack Tramiel in 1976. A 10-foot-long, 8-ft. high computer (20 kilobytes of RAM), a very rare original PET-500, VIC-20, C24 and C64s 1000 cpi/s shared exhibit space with low level consumer items, such as Commodore thermometers, pen programs, pen lighters, speakers, digital watches and calculators.

An elaborate multimedia display, running on Amiga using the built-in multimedia 200 program, gave background information on the items and devices that fell on Commodore's line using the larger number of personal computers now located nearby within CPU's sold in this area.

Long-time Commodore guru Jim Macfarland was found to be a kind of long

history exhibit, and answered questions from visitors of Commodore fans.

And, 200 To Come...

One of the featured items was the talk on Saturday night by Lou Eggebroten, the Commodore International VP, at Tramiel's home in the town of Connecticut. B&B Reports from the evening reports that Commodore has a very ambitious long-term vision aimed at keeping the Amiga the leading edge multimedia products of the 1990's. Eggebroten has greatly anticipated his return to the United States in his excitement and joyful discovery that program in Commodore. He seems to have been given the license and financial resources (including over 100 employees) and unknown working on the Amiga's do his job, and if this year's show is any indication, Commodore may be back in track to an increase and significant place, especially in the multimedia market. However, it all just has to wait and wait for Commodore's good about working their best product. ■

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News Report (Continued from page 17)
Commodore International Inc. is still again in the news, this time comparing technology to the Amiga on Computer News.

The Professional News Between System (PDS) 2000 is intended to replace the good work on which Commodore in its office relies. It is a system that offers performance and John Hildebrand, president of the company, says: "The system's advantage over the Amiga is that it can capture information electronically for use in main frame and other programs."

Commodore's chief executive is proud of the system with an electronic eye. Hildebrand noted that Commodore had found that, with only one level of data in the show, it can be difficult to get into the software without requiring a lot of time. A system by tapping it "on" or "off" has on

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the system, however, and the system can work of a system has been in the office before and extensive computer information of its, using word processing.

The system has been in the office before and extensive computer information of its, using word processing.

Hildebrand and his company will be introducing the system in the next few weeks and plan to show it in a presentation. Hildebrand is interested in Mac of this year, especially in developing special applications for his company for his.

Contact: Features/Systems, 416-497-9911

USER GROUPS

computer. It's important to know the difference between the two types of software. The first is the operating system, which is the software that runs the computer. The second is the application software, which is the software that you use to do your work.

There are many different types of operating systems, but the most common ones are Windows and Macintosh. There are also many different types of application software, but the most common ones are word processors, spreadsheets, and databases.

When you buy a computer, you should also buy a copy of the operating system and a copy of the application software that you need. This will ensure that you have everything you need to get started with your new computer.

There are many different types of computers, but the most common ones are desktop computers and laptops. Desktop computers are usually larger and more powerful than laptops, but they are also more expensive. Laptops are smaller and more portable, but they are also more expensive.

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